Chapter 23

New Criteria Quick Reference Guide **Changes are noted in Orange**

The preceding chapters of *Resources for Optimal Care of the Injured Patient* are designed to clearly define the criteria to verify that trauma centers have resources for optimal care of injured patients. Note: There are no Level IV trauma centers in Louisiana at this time.	**This chapter is included as a quick reference to identify the criteria to meet the requirements as stated in each chapter.**

Chapter	Level	Criterion by Chapter and Level	Type
Chapter 1: Trauma Systems			
1	I, II, III, IV	The individual trauma centers and their health care providers are essential system resources that must be active and engaged participants (CD 1–1).	TYPE II
1	I, II, III, IV	They must function in a way that pushes trauma center–based standardization, integration, and PIPS out to the region while engaging in inclusive trauma system planning and development (CD 1–2)	TYPE II
1	I, II, III, IV	Meaningful involvement in state and regional trauma system planning, development, and operation is essential for all designated trauma centers and participating acute care facilities within a region (CD 1–3)	TYPE II
Chapter 2: Description of Trauma Centers and Their Roles in a Trauma System			
2	I, II, III, IV	This trauma center must have an integrated, concurrent performance improvement and patient safety (PIPS) program to ensure optimal care and continuous improvement in care (CD 2–1).	TYPE I
2	I, II, III	Surgical commitment is essential for a properly functioning trauma center (CD 2–2).	TYPE I
2	I, II, III, IV	Trauma centers must be able to provide the necessary human and physical resources (physical plant and equipment) to properly administer acute care consistent with their level of verification (CD 2–3).	TYPE II
2	I	A Level I trauma center must admit at least 1,200 trauma patients yearly or have 240 admissions with an Injury Severity Score of more than 15. (CD 2–4).	TYPE I
2	I, II, III	Through the trauma PIPS program and hospital policy, the trauma director must have responsibility and authority for determining each general surgeon's ability to participate on the trauma panel based on an annual review (CD 2–5).	TYPE II
2	I, II	Qualified attending surgeons must participate in major therapeutic decisions, be present in the emergency department for major resuscitations, be present at operative procedures, and be actively involved in the critical care of all seriously injured patients (CD 2–6).	TYPE I
2	I, II	A resident in postgraduate year 4 or 5 or an attending emergency physician who is part of the trauma team may be approved to begin resuscitation while awaiting the arrival of the attending surgeon but cannot independently fulfill the responsibilities of, or substitute for, the	TYPE I

		attending surgeon (CD 2–6).	
2	I, II	The presence of such a resident or attending emergency physician may allow the attending surgeon to take call from outside the hospital. In this case, local criteria and a PIPS program must be established to define conditions requiring the attending surgeon's immediate hospital presence (CD 2–7).	TYPE II
2	I, II, III	For Level I, II and III trauma centers, it is expected that the surgeon will be in the emergency department on patient arrival, with adequate notification from the field. The maximum acceptable response time for the highest-level activation tracked from patient arrival for Level I and II trauma centers is 15 minutes, and 30 minutes for Level III trauma centers. The minimum criteria for full trauma team activation are provided in Table 2 in Chapter 5. The program must demonstrate that the surgeon's presence is in compliance at least 80 percent of the time (CD 2–8).	TYPE I
2	IV	For Level IV trauma centers, it is expected that the physician (if available) or midlevel provider will be in the emergency department on patient arrival, with adequate notification from the field. The maximum acceptable response time is 30 minutes for the highest level of activation, tracked from patient arrival. The PIPS program must demonstrate that the physician's (if available) or midlevel provider's presence is in compliance at least 80 percent of the time (CD 2–8).	TYPE I
2	I, II	The attending surgeon's immediate (within 15 minutes) arrival for patients with appropriate activation criteria must be monitored by the hospital's trauma PIPS program (CD 2–9).	TYPE I
2	I, II	The trauma surgeon on call must be dedicated to a single trauma center while on duty (CD 2–10)	TYPE II
2	I, II	In addition, a published backup call schedule for trauma surgery must be available (CD 2–11).	TYPE II
2	III	A Level III trauma center must have continuous general surgical coverage (CD 2–12).	TYPE II
2	III, IV	Well-defined transfer plans are essential (CD 2–13).	TYPE II
2	IV	Collaborative treatment and transfer guidelines reflecting the Level IV facilities' capabilities must be developed and regularly reviewed, with input from higher-level trauma centers in the region (CD 2–13).	TYPE II
2	IV	A Level IV facility must have 24-hour emergency coverage by a physician or midlevel provider (CD 2–14).	TYPE II
2	IV	The emergency department at Level IV centers must be continuously available for resuscitation with coverage by a registered nurse and physician or midlevel provider, and it must have a physician director (CD 2–15).	TYPE II
2	IV	These providers must maintain current Advanced Trauma Life Support® certification as part of their competencies in trauma (CD 2–16).	TYPE II

2	I, II, III, IV	For Level I, II, III and IV trauma centers a trauma medical director and trauma program manager knowledgeable and involved in trauma care must work together with guidance from the trauma peer review committee to identify events, develop corrective action plans, and ensure methods of monitoring, reevaluation, and benchmarking. (CD 2-17).	TYPE II
2	I, II, III, IV	Level I, II, III and IV trauma centers the multidisciplinary trauma peer review committee must meet regularly, with required attendance of medical staff active in trauma resuscitation, to review systemic and care provider issues, as well as propose improvements to the care of the injured (CD 2–18).	TYPE II
2	I, II, III, IV	Level I, II, III and IV trauma centers a PIPS program must have audit filters to review and improve pediatric and adult patient care (CD 2–19).	TYPE II
2	IV	Because of the greater need for collaboration with receiving trauma centers, the Level IV trauma center must also actively participate in regional and statewide trauma system meetings and committees that provide oversight (CD 2–20).	TYPE II
2	IV	The Level IV trauma center must also be the local trauma authority and assume the responsibility for providing training for prehospital and hospital-based providers (CD 2–21).	TYPE II
2	I, II, III, IV	Level I, II, III and IV trauma centers the facility must participate in regional disaster management plans and exercises (CD 2–22).	TYPE II
2	I, II, III	Any adult trauma center that annually admits 100 or more injured children younger than 15 years must fulfill the following additional criteria demonstrating their capability to care for injured children: trauma surgeons must be credentialed for pediatric trauma care by the hospital's credentialing body (CD 2–23).	TYPE II
2	I, II, III	There must be a pediatric emergency department area, a pediatric intensive care area, appropriate resuscitation equipment, and a pediatric-specific trauma PIPS program (CD 2–24).	TYPE II
2	I, II, III	For adult trauma centers annually admitting fewer than 100 injured children younger than 15 years, these resources are desirable. These hospitals, however, must review the care of their injured children through their PIPS program (CD 2–25).	TYPE II
Chapter 3: Prehospital Trauma Care			
3	I, II, III, IV	The trauma program must participate in the training of prehospital personnel, the development and improvement of prehospital care protocols, and performance improvement and patient safety programs (CD 3–1).	TYPE II
3	I, II, III, IV	The protocols that guide prehospital trauma care must be established by the trauma health care team, including surgeons, emergency physicians, medical directors for EMS agencies, and basic and advanced prehospital personnel (CD 3–2).	TYPE II
3	I, II, III	Rigorous multidisciplinary performance improvement is essential to evaluate overtriage and undertriage rates to attain the optimal goal of less than 5 percent undertriage (CD 3–3).	TYPE II

3	I, II, III	The trauma director must be involved in the development of the trauma center's bypass (diversion) protocol (CD 3–4).	TYPE II
3	I, II, III	The trauma surgeon must be involved in the decision regarding bypass (diversion) each time the center goes on bypass (CD 3–5).	TYPE II
3	I, II, III	The trauma center must not be on bypass (diversion) more than 5 percent of the time (CD 3–6).	TYPE II
3	I, II, III, IV	When a trauma center is required to go on bypass or to divert, the center must have a system to notify dispatch and EMS agencies (CD 3–7). The center must do the following: • Prearrange alternative destinations with transfer agreements in place • Notify other centers of divert or advisory status • Maintain a divert log • Subject all diverts and advisories to performance improvement procedures	TYPE II
Chapter 4: Interhospital Transfer			
4	I, II, III, IV	Direct physician-to-physician contact is essential (CD 4–1).	TYPE II
4	I, II, III	The decision to transfer an injured patient to a specialty care facility in an acute situation must be based solely on the needs of the patient and not on the requirements of the patient's specific provider network (for example, a health maintenance organization or a preferred provider organization) or the patient's ability to pay (CD 4–2).	TYPE II
4	I, II, III, IV	A very important aspect of interhospital transfer is an effective PIPS program that includes evaluating transport activities (CD 4–3).	TYPE II
4	I, II, III, IV	Perform a PIPS review of all transfers (CD 4–3).	TYPE II
Chapter 5: Hospital Organization and the Trauma Program			
5	I, II, III, IV	A decision by a hospital to become a trauma center requires the commitment of the institutional governing body and the medical staff (CD 5–1).	TYPE I
5	I, II, III, IV	Documentation of administrative commitment is required from the governing body and the medical staff (CD 5–1)	TYPE I
5	I, II, III	This [administrative] support must be reaffirmed continually (every 3 years) and must be current at the time of verification (CD 5–2).	TYPE II
5	I, II, III	The [medical staff] support must be reaffirmed continually (every 3 years) and must be current at the time of verification (CD 5–3).	TYPE II
5	I, II, III	The trauma program must involve multiple disciplines and transcend normal departmental hierarchies (CD 5–4).	TYPE II
5	I, II, III	The TMD must be a current board-certified general surgeon (or a general surgeon eligible for certification by the American Board of Surgery according to current requirements) or a general surgeon who is an American College of Surgeons Fellow with a special interest in trauma care and must participate in trauma call (CD 5-5).	TYPE I
5	I, II, III	The TMD must be current in Advanced Trauma Life Support® (ATLS®) (CD 5–6).	TYPE II
5	I, II	The TMD must maintain an appropriate level of trauma-related extramural continuing medical education (16 hours annually, or 48 hours	TYPE II

		in 3 years) (CD 5–7)	
5	I, II	Membership and active participation in regional or national trauma organizations are essential for the trauma director in Level I and II trauma centers and are desirable for TMDs in Level III and IV facilities (CD 5–8).	TYPE II
5	I, II, III	The TMD must have the authority to manage all aspects of trauma care (CD 5–9).	TYPE II
5	I, II, III	The TMD must chair and attend a minimum of 50% of the multidisciplinary trauma peer review committee meetings. (CD 5-10)	TYPE II
5	I, II, III	The TMD, in collaboration with the TPM, must have the authority to correct deficiencies in trauma care and exclude from trauma call the trauma team members who do not meet specified criteria (CD 5-11).	TYPE II
5	I, II, III	In addition, the TMD must perform an annual assessment of the trauma panel providers in the form of Ongoing Professional Practice Evaluation (OPPE) and Focused Professional Practice Evaluation (FPPE) when indicated by findings of the PIPS process (CD 5-11).	TYPE II
5	I, II, III	The TMD must have the responsibility and authority to ensure compliance with the above requirements and cannot direct more than one trauma center (CD 5-12).	TYPE II
5	I, II, III, IV	The criteria for a graded activation must be clearly defined by the trauma center, with the highest level of activation including the six required criteria listed in Table 2 (CD 5–13).	TYPE II
5	I, II	In Level I and II trauma centers, the highest level of activation requires the response of the full trauma team within 15 minutes of arrival of the patient, and the criteria should include physiologic criteria and some or several of the anatomic criteria (CD 5-14)	TYPE II
5	III, IV	In Level III and IV trauma centers the team must be fully assembled within 30 minutes (CD 5-15).	TYPE II
5	I, II, III, IV	Other potential criteria for trauma team activation that have been determined by the trauma program to be included in the various levels of trauma activation must be evaluated on an ongoing basis in the PIPS process (CD 5-16) to determine their positive predictive value in identifying patients who require the resources of the full trauma team.	TYPE II
5	I, II, III	The emergency physician may initially evaluate the limited-tier trauma patient, but the center must have a clearly defined response expectation for the trauma surgical evaluation of those patients requiring admission (CD 5-16).	TYPE II
5	I, II	In a Level I or II trauma center, seriously injured patients must be admitted to, or evaluated by, an identifiable surgical service staffed by credentialed trauma providers (CD 5-17).	TYPE II
5	III	In Level III centers, injured patients may be admitted to individual surgeons, but the structure of the program must allow the trauma director to have oversight authority for the care of these patients. (CD 5-17)	TYPE II

5	I, II, III	Programs that admit more than 10% of injured patients to non-surgical services must review all non-surgical admissions through the trauma PIPS process (CD 5–18).	TYPE II
5	I, II	Sufficient infrastructure and support to ensure adequate provision of care must be provided for this service (CD 5–19).	TYPE I
5	I, II	In teaching facilities, the requirements of the residency review committees must be met (CD 5–20).	TYPE II
5	III	There must be a method to identify the injured patients, monitor the provision of health care services, make periodic rounds, and hold formal and informal discussions with individual practitioners (CD 5–21).	TYPE I
5	I, II, III	In addition to administrative ability, the TPM must show evidence of educational preparation and clinical experience in the care of injured patients (CD 5-22).	TYPE II
5	I, II	In Level I and II trauma centers, the TPM must be full-time and dedicated to the trauma program (CD 5–23).	TYPE II
5	I, II	The TPM must show evidence of educational preparation, with a minimum of 16 hours (internal or external) of trauma-related continuing education per year and clinical experience in the care of injured patients (CD 5-24).	TYPE II
5	I, II, III	The trauma center's PIPS program must have a multidisciplinary trauma peer review committee chaired by the TMD (CD 5-25).	TYPE II
Chapter 6: Clinical Functions: General Surgery			
6	I, II, III	General surgeons caring for trauma patients must meet certain requirements, as described herein (CD–6-1). These requirements may be considered to be in four categories: current board certification, clinical involvement, performance improvement and patient safety, and education.	TYPE II
6	I, II, III	Board certification or eligible for certification by the American Board of Surgery according to current requirements or the alternate pathway is essential for general surgeons who take trauma call in Level I, II, and III trauma centers (CD 6–2).	TYPE II
6	I, II, III	Alternate Criteria (CD 6-3) for non–Board-Certified Surgeons in a Level I, II, or III Trauma Centers.	TYPE II
6	I, II, III	Trauma surgeons must have privileges in general surgery (CD 6–4).	TYPE II
6	I, II	In Level I and II trauma centers, the trauma surgeon on call must be dedicated to a single trauma center while on duty (CD 6–5).	TYPE I
6	I, II	In addition, a published backup call schedule for trauma surgery must be available (CD 6–6).	TYPE II
6	I, II, III, IV	For Level I and II trauma centers, the maximum acceptable response time is 15 minutes; for Level III and Level IV trauma centers, the maximum acceptable response time is 30 minutes. Response time will be tracked from patient arrival rather than from notification or activation. An 80 percent attendance threshold must be met for the highest-level activations (CD 2–8).	TYPE I

6	I, II, III	For Level I, II, and III trauma centers, the attending surgeon is expected to be present in the operating room for all operations. A mechanism for documenting this presence is essential (CD 6–7).	TYPE II
6	I, II, III	In Level I, II, and III trauma centers, there must be a multidisciplinary trauma peer review committee chaired by the trauma medical director (CD 5-25) and representatives from general surgery (CD 6-8), and liaisons from orthopedic surgery (CD 9-16), emergency medicine (CD 7-11), ICU (CD 11-62), and anesthesia (CD 11-13) – and for Level I and II trauma centers, neurosurgery (CD 8-13) and radiology (CD 11-39).	TYPE II
6	I, II, III	Each member of the group of general surgeons must attend at least 50 percent of the multidisciplinary trauma peer review committee meetings (CD 6–8).	TYPE II
6	I, II, III	All general surgeons on the trauma team must have successfully completed the Advanced Trauma Life Support® (ATLS®) course at least once (CD 6–9).	TYPE II
6	I, II	The trauma medical director must accrue an average of 16 hours annually or 48 hours in 3 years of verifiable external trauma-related CME (CD 5–7).	TYPE II
6	I, II	In Level I and II trauma centers, this requirement must be met by the acquisition of 16 hours of CME per year on average or by demonstrating participation in an internal educational process conducted by the trauma program based on the principles of practice-based learning and the performance improvement and patient safety program (CD 6–10).	TYPE II
Chapter 7: Clinical Functions: Emergency Medicine			
7	I, II, III	The emergency departments of Level I, II, and III trauma centers must have a designated emergency physician director supported by an appropriate number of additional physicians to ensure immediate care for injured patients (CD 7–1).	TYPE I
7	I, II	An emergency physician must be present in the department at all times in a Level I and Level II trauma centers (CD 7–2).	TYPE I
7	III	Occasionally, in a Level III trauma center, it is necessary for the physician to leave the emergency department for short periods to address in-house emergencies. Such cases and their frequency must be reviewed by the performance improvement and patient safety (PIPS) program to ensure that this practice does not adversely affect the care of patients in the emergency department (CD 7–3).	TYPE II
7	I, II, III	In institutions in which there are emergency medicine residency training programs, supervision must be provided by an in-house attending emergency physician 24 hours per day (CD 7–4).	TYPE II
7	I, II, III	These roles and responsibilities must be defined, agreed on, and approved by the director of the trauma service (CD 7–5).	TYPE II
7	I, II, III	Board certification or eligibility for certification by the appropriate emergency medicine board according to current requirements or the alternate pathway is essential for physicians staffing the emergency department and caring for trauma patients in Level I, II, and III trauma	TYPE II

		centers (CD 7–6).	
7	I, II, III	Alternate Criteria (CD 6-3) for Non–Board-Certified Emergency Medicine Physicians in Level I, II, and III Trauma Centers	TYPE II
7	I, II, III	Emergency physicians on the call panel must be regularly involved in the care of injured patients (CD 7–7).	TYPE II
7	I, II, III	A representative from the emergency department must participate in the prehospital PIPS program (CD 7–8).	TYPE II
7	I, II, III	A designated emergency physician liaison must be available to the trauma director for PIPS issues that occur in the emergency department (CD 7–9).	TYPE II
7	I, II, III	Emergency physicians must participate actively in the overall trauma PIPS program and the multidisciplinary trauma peer review committee (CD 7–10).	TYPE II
7	I, II, III	The emergency medicine liaison on the multidisciplinary trauma peer review committee must attend a minimum of 50 percent of the committee meetings (CD 7–11).	TYPE II
7	I, II	In Level I and II trauma centers, the liaison from emergency medicine must accrue an average of 16 hours annually or 48 hours in 3 years of verifiable external trauma-related CME (CD 7–12).	TYPE II
7	I, II	Other emergency physicians who participate on the trauma team also must be knowledgeable and current in the care of injured patients. This requirement may be met by documenting the acquisition of 16 hours of trauma-related CME per year on average or by demonstrating participation in an internal educational process conducted by the trauma program based on the principles of practice-based learning and the PIPS program (CD 7–13).	TYPE II
7	I, II, III	In Level I, II, and III trauma centers, all board-certified emergency physicians or those eligible for certification by an appropriate emergency medicine board according to current requirements must have successfully completed the ATLS course at least once (CD 7–14).	TYPE II
7	I, II, III	Physicians who are certified by boards other than emergency medicine who treat trauma patients in the emergency department are required to have current ATLS status (CD 7–15).	TYPE II
Chapter 8: Clinical Functions: Neurosurgery			
8	I, II	If this surgeon is not the director of the neurosurgery service, a neurologic surgeon liaison must be designated (CD 8–1).	TYPE I
8	I, II	Neurotrauma care must be continuously available for all TBI and spinal cord injury patients and must be present and respond within 30 minutes based on institutional-specific criteria (CD 8–2).	TYPE I
8	I, II	The trauma center must provide a reliable, published neurotrauma call schedule with formally arranged contingency plans in case the capability of the neurosurgeon, hospital, or system to care for neurotrauma patients is overwhelmed (CD 8–3).	TYPE I

8	I, II	The center must have a predefined and thoroughly developed neurotrauma diversion plan that is implemented when the neurosurgeon on call becomes encumbered (CD 8–4). A predefined, thoroughly developed neurotrauma diversion plan must include the following: • Emergency medical services notification of neurosurgery advisory status/diversion. • A thorough review of each instance by the performance improvement and patient safety (PIPS) program. • Monitoring of the efficacy of the process by the PIPS program.	TYPE II
8	I, II, III	A formal, published contingency plan must be in place for times in which a neurosurgeon is encumbered upon the arrival of a neurotrauma case (CD 8–5). The contingency plan must include the following: • A credentialing process to allow the trauma surgeon to provide initial evaluation and stabilization of the neurotrauma patient. • Transfer agreements with a similar or higher-level verified trauma center. • Direct contact with the accepting facility to arrange for expeditious transfer or ongoing monitoring support. • Monitoring of the efficacy of the process by the PIPS program.	TYPE II
8	I, II, III	If one neurosurgeon covers two centers within the same limited geographic area, there must be a published backup schedule (CD 8-6.)	TYPE II
8	I, II, III	In addition, the performance improvement process must demonstrate that appropriate and timely care is provided (CD 8–6).	TYPE II
8	III	A Level III trauma center must have a plan approved by the trauma medical director that determines which types of neurosurgical injuries may remain and which should be transferred (CD 8–7).	TYPE II
8	III	Transfer agreements must exist with appropriate Level I and Level II trauma centers (CD 8–8).	TYPE II
8	III	In all cases, whether patients are admitted or transferred, the care must be timely, appropriate, and monitored by the PIPS program (CD 8–9).	TYPE I
8	I, II, III	Board certification or eligibility for certification by an appropriate neurosurgical board according to the current requirements or the alternate pathway is essential for neurosurgeons who take trauma call in Level I, II, or III trauma centers (CD 8–10).	TYPE II
8	I, II, III	Alternate Criteria (CD 6-3) for Non–Board-Certified Neurosurgeons in Level I, II, and III Trauma Centers	TYPE II
8	I, II	Qualified neurosurgeons should be regularly involved in the care of patients with head and spinal cord injuries and must be credentialed by the hospital with general neurosurgical privileges (CD 8–11).	TYPE I
8	I, II	The neurosurgery service must participate actively in the overall trauma PIPS program (CD 8–12).	TYPE II
8	I, II	The neurosurgery liaison on the multidisciplinary trauma peer review committee must attend a minimum of 50 percent of the committee's meetings (CD 8–13).	TYPE II

8	III	Level III centers with any emergent neurosurgical cases must also have the participation of neurosurgery on the multidisciplinary trauma peer review committee (CD 8–13).	Type II
8	I, II	The liaison representative from neurosurgery must accrue an average of 16 hours annually or 48 hours in 3 years of verifiable external trauma-related CME (CD 8–14)	TYPE II
8	I, II	This requirement may be documented by the acquisition of 16 hours of trauma CME per year on average or through an internal educational process (IEP)conducted by the trauma program and the neurosurgical liaison based on the principles of practice-based learning and the PIPS program (CD 8–15).	TYPE II
Chapter 9: Clinical Functions: Orthopaedic Surgery			
9	I, II	Because of their skills and training in the management of the acute and rehabilitation phases of musculoskeletal trauma, physical and occupational therapists and rehabilitation specialists are essential at Level I and II trauma centers (CD 9–1).	TYPE II
9	I, II, III	Operating rooms must be promptly available to allow for emergency operations on musculoskeletal injuries, such as open fracture debridement and stabilization, external fixator placement, and compartment decompression (CD 9–2).	TYPE I
9	I, II	In Level I and II trauma centers, a system must be organized so that musculoskeletal trauma cases can be scheduled without undue delay and not at inappropriate hours that might conflict with more urgent surgery or other elective procedures (CD 9–3).	TYPE II
9	I, II, III	Level I, II, and III trauma centers must have an orthopaedic surgeon who is identified as the liaison to the trauma program (CD 9–4).	TYPE I
9	I	In a Level I trauma center the orthopaedic care must be overseen by an individual who has completed a fellowship in orthopaedic traumatology approved by the Orthopaedic Trauma Association (OTA) (CD 9-5).	TYPE I
9	PTC I	In Pediatric Level I trauma centers this requirement may be met by having formal transfer agreements that specify which cases will be transferred for high level orthopaedic oversight and assuring that all such transfers (or potential transfers) are reviewed as part of the performance improvement process (CD 9-5).	TYPE I
9	I, II	Orthopaedic team members must have dedicated call at their institution or have an effective backup call system (CD 9–6).	TYPE II
9	I, II	They must be available in the trauma resuscitation area within 30 minutes after consultation has been requested by the surgical trauma team leader for multiply injured patients (CD 9-7) based on institution-specific criteria.	TYPE II
9	I, II	The performance improvement process must ensure that care is timely and appropriate (CD 9-8).	TYPE II
9	I, II	If the on-call orthopaedic surgeon is unable to respond promptly, a backup consultant on-call surgeon must be available (CD 9-9).	TYPE II

9	I, II	The design of this system is the responsibility of the orthopaedic trauma liaison but must be approved by the trauma program director (CD 9-10).	TYPE II
9	I, II	The trauma center must provide all the necessary resources for modern musculoskeletal trauma care, including instruments, equipment, and personnel, along with readily available operating rooms for musculoskeletal trauma procedures (CD 2–3).	TYPE II
9	III	Level III facilities vary significantly in the staff and resources that they can commit to musculoskeletal trauma care, but they must have an orthopaedic surgeon on call and promptly available 24 hours a day (CD 9-11).	TYPE II
9	III	If the orthopaedic surgeon is not dedicated to a single facility while on call, then a published backup schedule is required (CD 9-12).	TYPE II
9	III	The PIPS process must review the appropriateness of the decision to transfer or retain major orthopaedic trauma cases (CD 9-13).	TYPE II
9	I, II	There must be protocols in Level I and II centers for the following orthopaedic emergencies: 1) the type and severity of pelvic and acetabular fractures that will be treated at the institutions as well as those that will be transferred out for care; 2) the timing and sequence for the treatment of long bone fractures in multiply injured patients; and 3) the wash out time for open fractures. These protocols must be included as part of the PIPS process (CD 9-14).	TYPE II
9	I, II, III	The orthopaedic service must participate actively with the overall trauma PIPS program and the multidisciplinary trauma peer review committee (CD 9–15).	TYPE II
9	I, II, III	The orthopaedic liaison to the trauma PIPS program must attend a minimum of 50 percent of the multidisciplinary trauma peer review committee meetings (CD 9–16).	TYPE II
9	I, II, III	Board certification or eligibility for certification by an appropriate orthopaedic board according to the current requirements, or the alternate pathway is essential for orthopaedic surgeons who take trauma call in Level I, II, and III trauma centers (CD 9–17).	TYPE II
9	I, II, III	Alternate Criteria (CD 6-3) for Non–Board-Certified Orthopaedic Surgeons in a Level I, II, or III Trauma Center	TYPE II
9	I, II	The orthopaedic surgical liaison to the trauma program at Level I and II centers must accrue an average of 16 hours annually or 48 hours in 3 years of verifiable external trauma-related continuing medical education (CME) (CD 9–18).	TYPE II
9	I, II	This requirement may be documented by the acquisition of 16 hours of trauma CME per year on average or through an internal educational process conducted by the trauma program and the orthopaedic liaison based on the principles of practice-based learning and the PIPS program (CD 9–19).	TYPE II
Chapter 10: Pediatric Trauma Care			
10	PTC I, II	Hospitals that pursue verification as pediatric trauma centers must meet the same resource requirements as adult trauma centers, in addition to pediatric resource requirements (CD 2–3) (Table 1)	TYPE II

10	PTC I	A Level I pediatric trauma center must annually admit 200 or more injured children younger than 15 years (CD 10–1)	TYPE I
10	PTC II	A Level II pediatric trauma center must annually admit 100 or more injured children younger than 15 years (CD 10–2).	TYPE I
10	PTC I, II	All Level I and II pediatric trauma centers must have a dedicated pediatric trauma program manager (CD 10–3)	TYPE I
10	PTC I, II	All Level I and II pediatric trauma centers must have a pediatric trauma registrar (CD 10–4).	TYPE II
10	PTC I	In a Level I pediatric trauma center, the pediatric trauma program manager must be a full-time position dedicated to the pediatric trauma service (CD 10–5)	TYPE II
10	PTC I, II	All pediatric trauma centers must have a pediatric trauma performance improvement and patient safety (PIPS) program (CD 10–6).	TYPE I
10	PTC I, II	In addition, all pediatric trauma centers must have the following programs: pediatric rehabilitation, child life and family support programs, pediatric social work, child protective services, pediatric injury prevention, community outreach, and education of health professionals and the general public in the care of pediatric trauma patients (CD 10–7).	TYPE II
10	PTC I, II	Level I and II pediatric trauma centers must have a mechanism in place to assess children for maltreatment (CD 10–8).	TYPE II
10	PTC I	Level I pediatric trauma centers must have identifiable pediatric trauma research (CD 10–9).	TYPE II
10	PTC I	The pediatric Level I center's research requirement is equivalent to that of adult Level I trauma centers (CD 10–10).	TYPE II
10	PTC I	In combined Level I adult and pediatric centers, half of the research requirement must be pediatric research (CD 10–11).	TYPE II
10	PTC I	A Level I pediatric trauma center must have at least two surgeons who are board certified or eligible for certification by the American Board of Surgery according to current requirements in pediatric surgery (CD 10–12).	TYPE I
10	PTC I	On staff, there must be one board-certified surgeon or one surgeon eligible for certification by an appropriate orthopaedic board (see Chapter 9, Clinical Functions: Orthopaedic Surgery) according to the current requirements of that board who also has had pediatric fellowship training (CD 10–13).	TYPE I
10	PTC I	Additionally, there must be on staff at least one board-certified surgeon or one surgeon eligible for certification by an appropriate neurosurgical board (see Chapter 8, Clinical Functions: Neurosurgery) according to current requirements of that board who also has had pediatric fellowship training (CD 10–14).	TYPE I
10	PTC I	There must be one additional board-certified orthopaedic surgeon or surgeon eligible for certification by an appropriate orthopaedic board according to the current requirements of that board (CD 10–15), who is identified with demonstrated interests and skills in pediatric trauma	TYPE II

		care.	
10	PTC I	There must be one additional board-certified neurosurgeon or surgeon eligible for certification by an appropriate neurosurgical board according to the current requirements of that board, who is identified with demonstrated interests and skills in pediatric trauma care (CD 10–16).	TYPE II
10	PTC I	There must be two physicians who are board certified or eligible for certification in pediatric critical care medicine, according to current requirements in pediatric critical care medicine: or in pediatric surgery and surgical critical care by the American Board of Surgery (CD 10–17).	TYPE I
10	PTC I	There must be two physicians who are board certified or eligible for certification by an appropriate emergency medicine board according to current requirements in pediatric emergency medicine (CD 10–18).	TYPE II
10	PTC I, II	The pediatric intensive care unit must be staffed by individuals credentialed by the hospital to provide pediatric trauma care in their respective areas (CD 10–19).	TYPE II
	PTC I, II	The pediatric section of the emergency department must be staffed by individuals credentialed by the hospital to provide pediatric trauma care in their respective areas (CD 10-20).	TYPE II
10	PTC II	In a Level II pediatric trauma center, there must be at least one pediatric surgeon who is board-certified or eligible for certification by the American Board of Surgery according to current requirements in pediatric surgeon (CD 10–21).	TYPE I
10	PTC II	There must be one surgeon who is board-certified or eligible for certification by an appropriate orthopaedic board (CD 10–22) identified with demonstrated interests and skills in pediatric trauma care.	TYPE II
10	PTC II	There must be one surgeon who is board-certified or eligible for certification by an appropriate neurosurgical board (CD 10–23) identified with demonstrated interests and skills in pediatric trauma care.	TYPE I
10	PTC I	In a Level I pediatric trauma center, the pediatric trauma medical director must be board certified or eligible for certification by the American Board of Surgery according to current requirements for pediatric surgery or alternatively, a pediatric surgeon who is a Fellow of the American College of Surgeons with a special interest in pediatric trauma care, and must participate in trauma call (CD 10–24).	TYPE I
10	PTC II	In a Level II pediatric trauma center, the pediatric trauma medical director should be a board-certified pediatric surgeon or a surgeon eligible for certification by the American Board of Surgery according to current requirements for pediatric surgeons. This individual must be a board-certified general surgeon or a general surgeon eligible for certification by the American Board of Surgery according to current requirements qualified to serve on the pediatric trauma team as defined in the following paragraph (CD 10–25).	TYPE I

10	PTC I, II	When the number of pediatric surgeons on staff is too few to sustain the pediatric trauma panel, general surgeons who are board certified or eligible for certification by the American Board of Surgery according to current requirements may serve on the pediatric trauma team. In this circumstance, they must be credentialed by the hospital to provide pediatric trauma care, be members of the adult trauma panel, and be approved by the pediatric trauma medical director (CD 10–26).	TYPE I
10	PTC I	At a minimum, a Level I pediatric trauma center must have continuous rotations in trauma surgery for senior residents (Clinical PGY 3–5) who are part of an Accreditation Council for Graduate Medical Education–accredited program (CD 10–27).	TYPE I
10	PTC I	At a minimum, these rotations should include residency programs in all the following specialties: general surgery, orthopaedic surgery, emergency medicine, and neurosurgery. They may also include support of a pediatric surgical fellowship (CD 10–28).	TYPE I
10	PTC I, II	In Level I and II pediatric trauma centers, other specialists (in anesthesiology, neurosurgery, orthopaedic surgery, emergency medicine, radiology, and rehabilitation) providing care to injured children who are not pediatric-trained providers also should have sufficient training and experience in pediatric trauma care and be knowledgeable about current management of pediatric trauma in their specialty. The program must make specialty-specific pediatric education available for these specialists (CD 10–29).	TYPE II
10	PTC I, II	An organized pediatric trauma service led by a pediatric trauma medical director must be present in Level I and II pediatric trauma centers (CD 10–30).	TYPE I
10	PTC I, II	The pediatric trauma service must maintain oversight of the patient's management while the patient is in the intensive care unit (CD 10–31).	TYPE II
10	PTC I, II	The trauma service should work collaboratively with the pediatric critical care providers, although all significant therapeutic decisions must be approved by the trauma service, and the service must be made aware of all significant clinical changes (CD 10–32).	TYPE II
10	PTC I, II	The surgical director of the pediatric intensive care unit must participate actively in the administration of the unit, as evidenced by the development of pathways and protocols for care of surgical patients in the intensive care unit and in unit-based performance improvement and should be board-certified in surgical critical care (CD 10–33).	TYPE I
10	PTC I, II	Pediatric surgeons or trauma surgeons with pediatric privileges must be included in all aspects of the care of injured children admitted to an intensive care unit (CD 10–34).	TYPE II
10	ATCTIC I, II	Any adult trauma center that annually admits 100 or more injured children younger than 15 years must fulfill the following additional criteria demonstrating its capability to care for the injured child (CD 2-23).	TYPE II
10	ATCTIC I, II	The trauma surgeons must be credentialed for pediatric trauma care by the hospital's credentialing body (CD 2-23).	TYPE II

10	ATCTIC I, II	There must be a pediatric emergency department area, a pediatric intensive care area, appropriate resuscitation equipment, and a pediatric-specific trauma PIPS program (CD 2-24).	TYPE II
10	ATCTIC I, II	For adult trauma centers admitting fewer than 100 injured children younger than 15 years per year, these resources are desirable. These hospitals, however, must review the care of all injured children through their PIPS programs (CD 2-25).	TYPE II
10	PTC I, II	Level I and II pediatric trauma centers must submit data to the National Trauma Data Bank® (NTDB®) (CD 10–35).	TYPE II
10	PTC I, II	There must be a trauma peer review committee chaired by the pediatric trauma medical director with participation by the pediatric /general surgeons and liaisons from pediatric/general surgery, orthopaedic surgery, neurosurgery, emergency medicine, pediatric critical care medicine, anesthesia, and radiology to improve trauma care by reviewing selected deaths, complications, and sentinel events with the objectives of identification of issues and appropriate responses (CD 10–36).	TYPE I
10	PTC I, II	The aforementioned representatives must attend at least 50% of the trauma peer review meetings, and their attendance must be documented (CD 10–37)	TYPE II
10	PTC I, II	All pediatric and general surgeons on the pediatric trauma panel treating children must attend at least 50% of the trauma peer review meetings (CD 10–38).	TYPE II
10	PTC I, II	In Level I and II pediatric trauma centers, the pediatric trauma medical director and the liaisons from neurosurgery, orthopaedic surgery, emergency medicine, and critical care medicine must each accrue an average of 16 hours annually or 48 hours in 3 years of verifiable external CME, of which at least 12 hours (in 3 years) must be related to clinical pediatric trauma care (CD 10–39)	TYPE II
10	PTC I, II	The other general surgeons, orthopaedic surgeons, neurosurgeons, emergency medicine physicians, and critical medicine care physicians who take trauma call in Level I and II pediatric trauma centers also must be knowledgeable and current in the care of injured patients. This requirement may be met by documenting the acquisition of 16 hours of CME per year on average or by demonstrating participation in an internal educational process conducted by the trauma program based on the principles of practice-based learning and the PIPS program (CD 10–40).	TYPE II
Chapter 11 Collaborative Clinical Services			
11	I, II, III	Anesthesiology services are critical in the management of severely injured patients and must be available within 30 minutes for emergency operations (CD 11–1)	TYPE I
11	I, II, III	Anesthesiology services are critical in the management of severely injured patients and must be available within 30 minutes for managing airway problems (CD 11–2).	TYPE I

11	I, II	The anesthetic care of injured patients in a Level I or II trauma center must be organized and supervised by an anesthesiologist who is highly experienced and committed to the care of injured patients and who serves as the designated liaison to the trauma program (CD 11–3).	TYPE I
11	I, II, III	In Level I, II, and III trauma centers, a qualified and dedicated physician anesthesiologist must be designated as the liaison to the trauma program (CD 11–3).	TYPE I
11	I, II	Anesthesia services in Level I and II trauma centers must be available in-house 24 hours a day (CD 11–4).	TYPE I
11	I, II	When anesthesiology senior residents or CRNAs are used to fulfill availability requirements, the attending anesthesiologist on call must be advised, available within 30 minutes at all times, and present for all operations (CD 11–5).	TYPE I
11	I, II, III	The availability of anesthesia services and delays in airway control or operations must be documented by the hospital performance improvement and patient safety (PIPS) process (CD 11–6).	TYPE II
11	III	In Level III hospitals, in-house anesthesia services are not required, but anesthesiologists or CRNAs must be available within 30 minutes (CD 11–7).	TYPE I
11	III	In Level III trauma centers without in-house anesthesia services, protocols must be in place to ensure the timely arrival at the bedside by the anesthesia provider within 30 minutes of notification and request. (CD 11–8).	TYPE I
11	III	Under these circumstances, the presence of a physician skilled in emergency airway management must be documented (CD 11–9).	TYPE I
11	I, II	All anesthesiologists taking call must have successfully completed an anesthesia residency program (CD 11–10).	TYPE I
11	I, II	Furthermore, in Level I and II trauma centers, anesthesiologists taking call must be currently board certified or eligible for certification by an appropriate anesthesia board according to current requirements in anesthesiology (CD 11–11).	TYPE I
11	I, II	Board certification or eligibility for certification is essential for anesthesiologists who take trauma call in Level I and II trauma centers (CD 11–11).	TYPE I
11	I, II, III	In Level I, II, and III trauma centers participation in the trauma PIPS program by the anesthesia liaison is essential (CD 11–12).	TYPE II
11	I, II, III	The anesthesiology liaison to the trauma program must attend at least 50 percent of the multidisciplinary peer review meetings, with documentation by the trauma PIPS program (see Chapter 16, Performance Improvement and Patient Safety) (CD 11–13).	TYPE II
11	I, II	An operating room must be adequately staffed and available within 15 minutes at Level I and II trauma centers (CD 11–14).	TYPE I
11	I, II	In Level I and II trauma centers, if the first operating room is occupied, an adequately staffed additional room must be available (CD 11–15).	TYPE II

11	I, II	Availability of the operating room personnel and timeliness of starting operations must be continuously evaluated by the trauma PIPS process and measures must be implemented to ensure optimal care (CD 11–16).	TYPE II
11	III	In Level III trauma centers, an operating room must be adequately staffed and available within 30 minutes (CD 11–17).	TYPE I
11	III	If an on-call team is used, the availability of operating room personnel and the timeliness of starting operations must be continuously evaluated by the trauma PIPS process, and measures must be implemented to ensure optimal care (CD 11–18).	TYPE II
11	I, II, III	All trauma centers must have rapid fluid infusers, thermal control equipment for patients and resuscitation fluids, intraoperative radiologic capabilities, equipment for fracture fixation, and equipment for bronchoscopy and gastrointestinal endoscopy (CD 11–19).	TYPE I
11	I, II, III	Level I, II, III trauma centers must have the necessary equipment to perform a craniotomy (CD 11–20). Only Level III trauma centers that do not offer neurosurgery services are not required to have craniotomy equipment.	TYPE I
11	I	Level I trauma centers must have cardiothoracic surgery capabilities available 24 hours per day and should have cardiopulmonary bypass equipment (CD 11–21)	TYPE II
11	I, II	In Level I and Level II trauma centers, if cardiopulmonary bypass equipment is not immediately available, a contingency plan, including immediate transfer to an appropriate center and 100 percent performance improvement review of all patients transferred, must be in place (CD 11–22).	TYPE II
11	I	Level I trauma centers must have an operating microscope available 24 hours per day (CD 11–23).	TYPE II
11	I, II, III	At Level I, II, and III trauma centers, a PACU with qualified nurses must be available 24 hours per day to provide care for the patient if needed during the recovery phase (CD 11–24).	TYPE I
11	I, II, III	If this availability requirement is met with a team on call from outside the hospital, the availability of the PACU nurses and compliance with this requirement must be documented by the PIPS program (CD 11–25).	TYPE II
11	I, II, III	The PACU must have the necessary equipment to monitor and resuscitate patients, consistent with the process of care designated by the institution (CD 11–26).	TYPE I
11	I, II, III	The PIPS program, at a minimum, must address the need for pulse oximetry, end-tidal carbon dioxide detection, arterial pressure monitoring, pulmonary artery catheterization, patient rewarming, and intracranial pressure monitoring (CD 11–27).	TYPE II
11	I, II, III	The trauma center must have policies designed to ensure that trauma patients who may require resuscitation and monitoring are accompanied by appropriately trained providers during transportation to, and while in, the radiology department (CD 11–28).	TYPE II
11	I, II, III, IV	Conventional radiography must be available in all trauma centers 24 hours per day (CD 11–29).	TYPE I

11	I, II, III	Computed tomography (CT) must be available in Levels I, II, and III trauma centers 24 hours per day (CD 11–30)	TYPE I
11	I, II	An in-house radiology technologist and CT technologist are required at Level I and II trauma centers (CD 11–31).	TYPE I
11	I, II, III	In Level I, II, and III trauma centers, qualified radiologists must be available within 30 minutes in person or by teleradiology for the interpretation of radiographs. (CD 11-32)	TYPE I
11	I, II	In Level I and II trauma centers qualified radiologists must be available within 30 minutes to perform complex imaging studies, or interventional procedures (CD 11-33).	TYPE II
11	I, II, III	In Level I, II, and III trauma centers diagnostic information must be communicated in a written or electronic form and in a timely manner (CD 11–34).	TYPE II
11	I, II, III	Critical information deemed to immediately affect patient care must be verbally communicated to the trauma team in a timely manner (CD 11–35).	TYPE II
11	I, II, III	The final report must accurately reflect the chronology and content of communications with the trauma team, including changes between the preliminary and final interpretations (CD 11–36).	TYPE II
11	I, II, III	Changes in interpretation between preliminary and final reports, as well as missed injuries, must be monitored through the PIPS program (CD 11–37).	TYPE II
11	I, II	In Level I and II facilities, a radiologist must be appointed as liaison to the trauma program (CD 11–38).	TYPE II
11	I, II	The radiologist liaison must attend at least 50 percent of peer review meetings and should educate and guide the entire trauma team in the appropriate use of radiologic services (CD 11–39).	TYPE II
11	I, II	In Level I and II trauma centers, participation in the trauma PIPS program process by the radiology liaison is essential (CD 11–40).	TYPE II
11	I, II	At a minimum, radiologists must be involved in protocol development and trend analysis that relate to diagnostic imaging (CD 11–41).	TYPE II
11	I, II	Level I and II facilities must have a mechanism in place to view radiographic imaging from referring hospitals within their catchment area (CD 11–42).	TYPE II
11	I, II	Board certification or eligibility for certification by an appropriate radiology board according to current requirements is essential for radiologists who take trauma call in Level I and II trauma centers (CD 11–43).	TYPE II
11	I, II	Interventional radiologic procedures and sonography must be available 24 hours per day at Level I and II trauma centers (CD 11–44).	TYPE I
11	I, II	Magnetic resonance imaging (MRI) capability must be available 24 hours per day at Level I and II trauma centers (CD 11–45).	TYPE II
11	I, II	The MRI technologist may respond from outside the hospital; however, the PIPS program must document and review arrival within 1 hour of being called. This time should meet current clinical guidelines (CD 11–	TYPE II

		46).	
11	III	In Level III centers, if the CT technologist takes call from outside the hospital, the PIPS program must document the technologist's time of arrival at the hospital (CD 11–47).	TYPE II
11	I	In a Level I trauma center, a surgically directed ICU physician team must be led by a surgeon boarded in surgical critical care, and critically ill trauma patients should be cared for in a designated ICU (CD 11–48).	TYPE I
11	I	A surgeon with current board certification in surgical critical care must be designated as the ICU director (CD 11–49).	TYPE II
11	I	The ICU team may be staffed by critical care physicians from different specialties but must remain surgically directed as noted above (CD 11-49).	TYPE II
11	I	The ICU must be staffed with a dedicated ICU physician team led by the ICU director (CD 11–50).	TYPE II
11	I	Appropriately trained physicians must be available in-house within 15 minutes to provide care for the ICU patients 24 hours per day (CD 11–51).	TYPE I
11	I	If the trauma attending provides coverage, a backup ICU attending must be identified and readily available (CD 11–52).	TYPE II
11	II, III	In Level II and III trauma centers, a surgeon must serve as co-director or director of the ICU and be actively involved in, and responsible for, setting policies and administrative decisions related to trauma ICU patients (CD 11–53).	TYPE II
11	II, III	In a Level II facility, the ICU director or co-director should be currently board certified or eligibility for certification in surgical critical care. In Level II and III facilities, the ICU director or co-director must be a surgeon who is currently board certified or eligible for certification by the current standard requirements (CD 11–54).	TYPE II
11	II	In Level II trauma centers, physician coverage of critically ill trauma patients must be available within 15 minutes 24 hours per day for interventions by a credentialed provider (CD 11–55).	TYPE I
11	III	In Level III trauma centers, physician coverage of the ICU must be available within 30 minutes, with a formal plan in place for emergency coverage (CD 11–56).	TYPE I
11	III	In Level III trauma centers, the PIPS program must review all ICU admissions and transfers of ICU patients to ensure that appropriate patients are being selected to remain at the Level III center vs. being transferred to a higher level of care (CD 11–57).	TYPE II
11	I, II, III	In Level I, II, and III trauma centers, the trauma surgeon must retain responsibility for the patient and coordinate all therapeutic decisions (CD 11–58).	TYPE I
11	I, II, III	Many of the daily care requirements can be collaboratively managed by a dedicated ICU team, but the trauma surgeon must be kept informed and concur with major therapeutic and management decisions made by	TYPE I

		the ICU team (CD 11–59).	
11	I, II, III, IV	For all levels of trauma centers, the PIPS program must document that timely and appropriate ICU care and coverage are being provided (CD 11–60).	TYPE II
11	I, II, III	In all Level I, II, and III trauma centers, the timely response of credentialed providers to the ICU must be continuously monitored as part of the PIPS program (CD-11-60).	TYPE II
11	I, II, III	There must be a designated ICU liaison to the trauma service (CD 11–61).	TYPE II
11	I, II, III	This [ICU] liaison must attend at least 50 percent of the multidisciplinary peer review meetings, with documentation by the trauma PIPS program (CD 11–62).	TYPE II
11	I, II	The ICU liaison to the trauma program at Level I and II centers must accrue an average of 16 hours annually or 48 hours in 3 years of verifiable external trauma-related continuing medical education (CME) (CD 11–63).	TYPE II
11	I, II	This requirement must be documented by the acquisition of 16 hours of trauma CME per year, on average, or through an internal educational process conducted by the trauma program and the ICU liaison based on the principles of practice-based learning and the PIPS program (CD 11–64).	TYPE II
11	I, II, III	At Level I, II, and III trauma centers, qualified critical care nurses must be available 24 hours per day to provide care for patients during the ICU phase (CD 11–65).	TYPE I
11	I, II, III	The patient-to-nurse ratio in the ICU must not exceed two to one (CD 11–66).	TYPE II
11	I, II, III	The ICU must have the necessary equipment to monitor and resuscitate patients (CD 11–67).	TYPE I
11	I, II, III	Intracranial pressure monitoring equipment must be available in Level I and II trauma centers and in Level III trauma centers with neurosurgical coverage that admit neurotrauma patients (CD 11–68).	TYPE I
11	III	Trauma patients must not be admitted or transferred by a primary care physician without the knowledge and consent of the trauma service, and the PIPS program should monitor adherence to this guideline (CD 11–69).	TYPE II
11	I	Level I facilities are prepared to manage the most complex trauma patients and must have available a full spectrum of surgical specialists, including specialists in orthopaedic surgery, neurosurgery, cardiac surgery, thoracic surgery, vascular surgery, hand surgery, microvascular surgery, plastic surgery, obstetric and gynecologic surgery, ophthalmology, otolaryngology, and urology (CD 11–70).	TYPE I

11	II	Level II centers must have the surgical specialists described for Level I trauma centers and should provide cardiac surgery (CD 11–71). [Level I facilities must have specialists in orthopaedic surgery, neurosurgery, thoracic surgery, vascular surgery, hand surgery, microvascular surgery, plastic surgery, obstetric and gynecologic surgery, ophthalmology, otolaryngology, and urology.	TYPE I
11	III	Level III trauma centers must have the availability and commitment of orthopaedic surgeons (CD 11–72).	TYPE I
11	I, II, III	For all patients being transferred for specialty care, such as burn care, microvascular surgery, cardiopulmonary bypass capability, complex ophthalmologic surgery, or high-complexity pelvic fractures, agreements with a similar or higher-qualified verified trauma center should be in place. If this approach is used, a clear plan for expeditious critical care transport, follow-up, and performance monitoring is required (CD 8–5). If complex cases are being transferred out, a contingency plan should be in place and must include the following: • A credentialing process to allow the trauma surgeon to provide initial evaluation and stabilization of the patient. • Transfer agreements with similar or higher-verified trauma centers. • Direct contact with the accepting facility to arrange for expeditious transfer or ongoing monitoring support. • Monitoring of the efficacy of the process by the PIPS programs.	TYPE II
11	I, II	In Level I and II trauma centers, medical specialists on staff must include specialists in cardiology, internal medicine, gastroenterology, infectious disease, pulmonary medicine, and nephrology and their respective support teams (for example, respiratory therapy, a dialysis team, and nutrition support) (CD 11–73).	TYPE II
11	III	In a Level III facility, internal medicine specialists must be available on the medical staff (CD 11–74).	TYPE II
11	I, II	Several support services are required to care for trauma patients. In Level I and II trauma centers, a respiratory therapist must be available in the hospital 24 hours per day (CD 11–75).	TYPE I
11	III	In Level III centers, there must be a respiratory therapist on call 24 hours per day (CD 11–76).	TYPE I
11	I, II	Acute hemodialysis must be available in Level I and II trauma centers (CD 11–77).	TYPE II
11	III	Level III trauma centers that do not have dialysis capabilities must have a transfer agreement in place (CD 11–78).	TYPE II
11	I, II	Nutrition support services must be available in Level I and II centers (CD 11–79).	TYPE II
11	I, II, III, IV	In trauma centers of all levels, laboratory services must be available 24 hours per day for the standard analyses of blood, urine, and other body fluids, including microsampling when appropriate (CD 11–80).	TYPE I
11	I, II, III, IV	The blood bank must be capable of blood typing and cross-matching (CD	TYPE I

		11–81).	
11	I, II	For Level I and II centers, the blood bank must have an adequate in-house supply of red blood cells, fresh frozen plasma, platelets, cryoprecipitate, and appropriate coagulation factors to meet the needs of injured patients (CD 11–82).	TYPE I
11	III	In Level III centers, the blood bank must have an adequate supply of packed red blood cells and fresh frozen plasma available within 15 minutes (CD 11–83).	TYPE I
11	I, II, III, IV	Trauma centers of all levels must have a massive transfusion protocol developed collaboratively between the trauma service and the blood bank (CD 11–84).	TYPE I
11	I, II, III	Coagulation studies, blood gas analysis, and microbiology studies must be available 24 hours per day (CD 11–85).	TYPE I
11	I, II, III, IV	Advanced practitioners who participate in the initial evaluation of trauma patients must demonstrate current verification as an Advanced Trauma Life Support® provider (CD 11–86).	TYPE II
11	I, II, III, IV	The trauma program must also demonstrate appropriate orientation, credentialing processes, and skill maintenance for advanced practitioners, as witnessed by an annual review by the trauma medical director (CD 11–87).	TYPE II
Chapter 12: Rehabilitation			
12	I, II	In Level I and II trauma centers, rehabilitation services must be available within the hospital's physical facilities or as a freestanding rehabilitation hospital, in which case the hospital must have transfer agreements (CD 12–1).	TYPE II
12	I, II	Rehabilitation consultation services, occupational therapy, speech therapy, physical therapy, and social services are often needed in the critical care phase and must be available in Level I and II trauma centers (CD 12–2).	TYPE II
12	I, II, III	Physical therapy (CD 12–3) must be provided in Level I, II, and III trauma centers.	TYPE I
12	I, II, III	Social services (CD 12–4) must be provided in Level I, II, and III trauma centers.	TYPE II
12	I, II	Occupational therapy (CD 12–5) must be provided in Level I and II centers.	TYPE II
12	I, II	Speech therapy (CD 12–6) must be provided in Level I and II centers.	TYPE II
12	I, II	In Level I and II trauma centers, these services [physical therapy, social services, occupational therapy and speech therapy] must be available during the acute phase of care, including intensive care (CD 12–7).	TYPE II
Chapter 13: Rural Trauma Care			
13	I, II, III, IV	Direct contact of the physician or midlevel provider with a physician at the receiving hospital is essential (CD 4–1).	TYPE II
13	III, IV	Transfer guidelines and agreements between facilities are crucial and must be developed after evaluating the capabilities of rural hospitals and medical transport agencies (CD 2–13).	TYPE II

13	I, II, III, IV	All transfers must be evaluated as part of the receiving trauma center's performance improvement and patient safety (PIPS) process (CD 4–3), and feedback should be provided to the transferring center.	TYPE II
13	I, II	Level I and II centers must be able to read images from referring centers (CD 11–41)	TYPE II
13	I, II, III, IV	The foundation for evaluation of a trauma system is the establishment and maintenance of a trauma registry (CD 15–1).	TYPE II
13	I, II, III, IV	Issues that must be reviewed will revolve predominately around (1) system and process issues such as documentation and communication; (2) clinical care, including identification and treatment of immediate life-threatening injuries (ATLS®); and (3) transfer decisions (CD 16-10).	TYPE II
13	I, II, III, IV	The best possible care for patients must be achieved with a cooperative and inclusive program that clearly defines the role of each facility within the system (CD 1–1).	TYPE II
Chapter 14: Guidelines for the Operation of Burn Centers			
14	I, II, III, IV	Trauma centers that refer burn patients to a designated burn center must have in place written transfer agreements with the referral burn center (CD 14–1)	TYPE II
Chapter 15: Trauma Registry			
15	I, II, III, IV	Trauma registry data must be collected and analyzed by every trauma center (CD 15–1).	TYPE II
15	I, II, III	Finally, these data must be collected in compliance with the National Trauma Data Standard (NTDS) and submitted to the National Trauma Data Bank® (NTDB®) every year in a timely fashion so that they can be aggregated and analyzed at the national level (CD 15–2).	TYPE II
15	I, II, III, IV	The trauma registry is essential to the performance improvement and patient safety (PIPS) program and must be used to support the PIPS process (CD 15–3).	TYPE II
15	I, II, III, IV	Furthermore, these findings must be used to identify injury prevention priorities that are appropriate for local implementation (CD 15–4).	TYPE II
15	I, II, III	All trauma centers must use a risk adjusted benchmarking system to measure performance and outcomes (CD 15-5).	TYPE II
15	I, II, III, IV	Trauma registries should be concurrent. At a minimum, 80 percent of cases must be entered within 60 days of discharge (CD 15–6)	TYPE II
15	I, II, III	[Registrar] They must attend or have previously attended two courses within 12 months of being hired: (1) the American Trauma Society's Trauma Registrar Course or equivalent provided by a state trauma program; and (2) the Association of the Advancement of Automotive Medicine's Injury Scaling Course (CD 15–7).	TYPE II
15	I, II, III, IV	The trauma program must ensure that appropriate measures are in place to meet the confidentiality requirements of the data (CD 15–8).	TYPE II
15	I, II, III	One full-time equivalent employee dedicated to the registry must be available to process the data capturing the NTDS data set for each 500–750 admitted patients annually (CD 15–9).	TYPE II

15	I, II, III, IV	Strategies for monitoring data validity are essential (CD 15–10).	TYPE II
Chapter 16: Performance Improvement and Patient Safety			
16	I, II, III	Trauma centers must have a PIPS program that includes a comprehensive written plan outlining the configuration and identifying both adequate personnel to implement that plan and an operational data management system (CD 16–1).	TYPE II
16	I, II, III, IV	The PIPS program must be supported by a reliable method of data collection that consistently obtains the information necessary to identify opportunities for improvement (CD 15–1).	TYPE II
16	I, II, III, IV	The processes of event identification and levels of review must result in the development of corrective action plans, and methods of monitoring, reevaluation, and benchmarking must be present (CD 2–17).	TYPE II
16	I, II, III	Problem resolution, outcome improvements, and assurance of safety ("loop closure") must be readily identifiable through methods of monitoring, reevaluation, benchmarking, and documentation (CD 16–2).	TYPE II
16	I, II, III, IV	Peer review must occur at regular intervals to ensure that the volume of cases is reviewed in a timely fashion (CD 2–18).	TYPE II
16	I, II, III	The trauma PIPS program must integrate with the hospital quality and patient safety effort and have a clearly defined reporting structure and method for provision of feedback (CD 16–3).	TYPE II
16	I, II, III, IV	Because the trauma PIPS program crosses many specialty lines, it must be empowered to address events that involve multiple disciplines and be endorsed by the hospital governing body as part of its commitment to optimal care of injured patients (CD 5–1).	TYPE I
16	I, II, III, IV	There must be adequate administrative support to ensure evaluation of all aspects of trauma care (CD 5–1).	TYPE I
16	I, II, III, IV	The trauma medical director and trauma program manager must have the authority and be empowered by the hospital governing body to lead the program (CD 5–1).	TYPE I
16	I, II, III	The trauma medical director must have sufficient authority to set the qualifications for the trauma service members, including individuals in specialties that are routinely involved with the care of the trauma patient (CD 5–11).	TYPE II
16	I, II, III	Moreover, the trauma medical director must have authority to recommend changes for the trauma panel based on performance review (CD 5–11).	TYPE II
16	I, II, III	The peer review committee must be chaired by the TMD (CD 5-25)	TYPE II
16	I, II, III	In Level I, II, and III trauma centers, representation from general surgery (CD 6-8), and liaisons to the trauma program from emergency medicine (CD 7–11), orthopaedics (CD 9–16), and anesthesiology (CD 11–13), critical care (CD 11-62)—and for Level I and II centers, neurosurgery (CD 8–13), and radiology (CD 11–39)—must be identified and participate actively in the trauma PIPS program with at least 50 percent attendance at multidisciplinary trauma peer review committee.	TYPE II

16	III	Level III centers with any emergent neurosurgical cases must also have the participation of neurosurgery on the multidisciplinary trauma peer review committee (CD 8–13).	Type II
16	I, II	In Level I and II trauma centers, the trauma medical director (CD 5–7), trauma program manager (CD 5–24), and liaisons to the trauma program in emergency medicine (CD 7–12), orthopaedics (CD 9–18), critical care (CD 11–63), and neurosurgery (CD 8–14) must obtain 16 hours annually or 48 hours in 3 years of verifiable, external, trauma-related education (continuing medical education [CME] or CE, as appropriate to the discipline).	Type II
16	I, II, III, IV	The trauma center must demonstrate that all trauma patients can be identified for review (CD 15–1).	TYPE II
16	I, II, III	In Level I, II, and III trauma centers, the trauma registry must submit the required data elements to the NTDB (CD 15–2).	TYPE II
16	I, II, III, IV	The trauma PIPS program must be supported by a registry and a reliable method of concurrent data collection that consistently obtains information necessary to identify opportunities for improvement (CD 15–3).	TYPE II
16	I, II, III	All trauma centers must use a risk adjusted benchmarking system to measure performance and outcomes (CD 15-5).	TYPE II
16	I, II, III	To achieve this goal, a trauma program must use clinical practice guidelines, protocols, and algorithms derived from evidenced-based validated resources (CD 16–4).	TYPE II
16	I, II, III, IV	All process and outcome measures must be documented within the trauma PIPS program's written plan and reviewed and updated at least annually (CD 16–5).	TYPE II
16	I, II, III	Mortality Review (CD 16–6). All trauma-related mortalities must be systematically reviewed and those mortalities with opportunities for improvement identified for peer review. 1. Total trauma-related mortality rates. Outcome measures for total, pediatric (younger than 15 years), and geriatric (older than 64 years) trauma encounters should be categorized as follows: a. DOA (pronounced dead on arrival with no additional resuscitation efforts initiated in the emergency department). b. DIED (died in the emergency department despite resuscitation efforts). c. In-hospital (including operating room). 2. Mortality rates by Injury Severity Scale (ISS) subgroups using Table 1.	TYPE II
16	I, II, III, IV	Trauma surgeon response to the emergency department (CD 2–9). See previous detail.	TYPE II
16	I, II, III, IV	Trauma team activation (TTA) criteria (CD 5–13). See previous detail.	TYPE II
16	I, II, III, IV	All Trauma Team Activations must be categorized by the level of response and quantified by number and percentage, as shown in Table 2 (CD 5–14, CD 5–15).	TYPE II

16	I, II, III	Trauma surgeon response time to other levels of TTA, and for back-up call response, should be determined and monitored. Variances should be documented and reviewed for reason for delay, opportunities for improvement, and corrective actions (CD 5–16)	TYPE II
16	I, II, III	Response parameters for consultants addressing time-critical injuries (for example, epidural hematoma, open fractures, and hemodynamically unstable pelvic fractures) must be determined and monitored (CD 5–16).	TYPE II
16	I, II, III	Rates of undertriage and overtriage must be monitored and reviewed quarterly (CD 16–7).	TYPE II
16	I, II, III	Trauma patient admissions (NTDS definition) to a nonsurgical service is higher than 10 percent (CD 5–18).	TYPE II
16	I, II	Pediatric (14 years or younger) trauma care. 1. Trauma centers admitting at least 100 pediatric trauma patients annually require a pediatric-specific trauma PIPS program (CD 10–6). 2. Trauma centers admitting less than 100 pediatric trauma patients annually must review each case for timeliness and appropriateness of care (CD 10–6).	TYPE I
16	I, II, III, IV	Acute transfers out (CD 9–14). All trauma patients who are diverted (CD 3–4) or transferred (CD 4–3) during the acute phase of hospitalization to another trauma center, acute care hospital, or specialty hospital (for example, burn center, reimplantation center, or pediatric trauma center) or patients requiring cardiopulmonary bypass or when specialty personnel are unavailable must be subjected to individual case review to determine the rationale for transfer, appropriateness of care, and opportunities for improvement. Follow-up from the center to which the patient was transferred should be obtained as part of the case review.	TYPE II
16	III	Emergency physicians covering in-house emergencies at Level III trauma centers (CD 7–3). See previous detail.	TYPE II
16	I, II, III	Trauma center diversion-bypass hours must be routinely monitored, documented, and reported, including the reason for initiating the diversion policy (CD 3–6), and must not exceed 5 percent.	TYPE II
16	III	Appropriate neurosurgical care at Level III trauma centers (CD 8–9).	TYPE II
16	I, II, III	Availability of the anesthesia service (CD 11–4, CD 11-7, CD 11–16, CD 11-18). o In-house anesthesia service (emergency department, intensive care unit, floor, and postanesthesia care unit) must be available for the care of trauma patients o Operating room delays involving trauma patients because of lack of anesthesia support services must be identified and reviewed to determine the reason for delay, adverse outcomes, and opportunities for improvement.	TYPE II
16	I, II, III	Delay in operating room availability (CD 11–16, CD 11–18) must be routinely monitored. Any case that is associated with a significant delay or adverse outcome must be reviewed for reasons for delay and opportunities for improvement.	TYPE II

16	I, II, III	Response times of operating room and postanesthesia care unit personnel when responding from outside the trauma center (CD 11–16, CD 11–18, CD 11–25) must be routinely monitored.	TYPE II
16	I, II, III	Rate of change in interpretation of radiologic studies (CD 11–32, CD 11–37) should be categorized by RADPEER or similar criteria (describe process/scoring metric used).	TYPE I
16	I, II, III	Response times of computed tomography technologist(30 minutes)/magnetic resonance imaging (60 minutes) technologist/interventional radiology team (30 minutes) when responding from outside the trauma center (CD 11–29, CD 11–30, CD 11–31, CD 11–32, CD 11–33, CD 11–34, CD 11–35, CD 11–36, CD 11-37, and CD 11–46.)	TYPE I
16	I, II, III, IV	Transfers to a higher level of care within the institution (CD 16–8).	TYPE II
16	I, II, III	Solid organ donation rate (CD 16–9).	TYPE II
16	I, II, III, IV	Trauma registry (CD 15–6). See previous detail.	TYPE II
16	I, II, III	Multidisciplinary trauma peer review committee attendance. (Level I, II and III, CD 5-10, CD 6-8, CD 7-11, CD 9-16, CD 11-13, CD 11-62 –and for Level I and II CD 8-13 and CD 11-39)	TYPE II
16	I	Trauma Center Volume (CD 2–4). See previous detail.	TYPE I
16	I, II, III, IV	Sufficient mechanisms must be available to identify events for review by the trauma PIPS program (CD 16–10).	TYPE II
16	I, II, III, IV	Once an event is identified, the trauma PIPS program must be able to verify and validate that event (CD 16–11).	TYPE II
16	I, II, III	There must be a process to address trauma program operational events (CD 16–12).	TYPE II
16	I, II, III	Documentation (minutes) reflects the review of operational events and, when appropriate, the analysis and proposed corrective actions (CD 16–13).	TYPE II
16	I, II, III	Mortality data, adverse events and problem trends, and selected cases involving multiple specialties must undergo multidisciplinary trauma peer review (CD 16–14)	TYPE II
16	I, II, III	This effort may be accomplished in a variety of formats but must involve the participation and leadership of the trauma medical director (CD 5–10); the group of general surgeons on the call panel; and the liaisons from emergency medicine, orthopaedics, neurosurgery, anesthesia, critical care, and radiology (Level I, II and III, CD 6-8, CD 7-11, CD 9-16, CD 11-13, CD 11-62 - Level I and II centers, CD 8-13 CD 11-39).	TYPE II
16	I, II, III	Each member of the committee must attend at least 50 percent of all multidisciplinary trauma peer review committee meetings (CD 16–15).	TYPE II
16	I, II, III	When these general surgeons cannot attend the multidisciplinary trauma peer review meeting, the trauma medical director must ensure that they receive and acknowledge the receipt of critical information generated at the multidisciplinary peer review meeting to close the loop	TYPE II

		(CD 16–16).	
16	I, II, III	The multidisciplinary trauma peer review committee must systematically review mortalities, significant complications, and process variances associated with unanticipated outcomes and determine opportunities for improvement (CD 16–17).	TYPE II
16	I, II, III	When an opportunity for improvement is identified, appropriate corrective actions to mitigate or prevent similar future adverse events must be developed, implemented, and clearly documented by the trauma PIPS program (CD 16–18).	TYPE II
16	I, II, III	An effective performance improvement program demonstrates through clear documentation that identified opportunities for improvement lead to specific interventions that result in an alteration in conditions such that similar adverse events are less likely to occur (CD 16–19).	TYPE II
Chapter 17: Outreach and Education			
17	I, II, III, IV	All verified trauma centers, however, must engage in public and professional education (CD 17–1).	TYPE II
17	I, II	Level I and II centers also must provide some means of referral and access to trauma center resources (CD 17–2).	TYPE II
17	I	At a minimum, a Level I trauma center must have continuous rotations in trauma surgery for senior residents (Clinical PGY 4–5) that are part of an Accreditation Council for Graduate Medical Education–accredited program (CD 17–3). For pediatric Level I centers, the continuous rotation for surgical residents is extended to include clinical PGY 3 (CD 10-27).	TYPE I
17	I, II, III	In Level I, II, and III trauma centers, the hospital must provide a mechanism to offer trauma-related education to nurses involved in trauma care (CD 17–4).	TYPE II
17	I, II, III, IV	The successful completion of the ATLS® course, at least once, is required in all levels of trauma centers for all general surgeons (CD 6-9), emergency medicine physicians (CD 7-14) and midlevel providers (CD 11-86) on the trauma team.	TYPE II
17	I, II	The trauma director (CD 5-7) and the liaison representatives from neurosurgery (CD 8-14), orthopaedic surgery (CD 9-18), emergency medicine (CD 7-12), and critical care (CD 11-63) must accrue an average of 16 hours annually, or 48 hours in 3 years, of external trauma-related CME.	TYPE II
17	I, II	Other members of the general surgery (CD 6-11), neurosurgery (CD 8-15), orthopaedic surgery (CD 9-19), emergency medicine (CD 7-13), and critical care (CD 11-64) specialties who take trauma call also must be knowledgeable and current in the care of injured patients.	TYPE II
Chapter 18: Prevention			
18	I, II, III, IV	Trauma centers must have an organized and effective approach to injury prevention and must prioritize those efforts based on local trauma registry and epidemiologic data (CD 18–1).	TYPE II

18	I, II, III, IV	Each trauma center must have someone in a leadership position that has injury prevention as part of his or her job description (CD 18-2)	TYPE II
18	I	In Level I centers, this individual must be a prevention coordinator (separate from the trauma program manager) with a job description and salary support (CD 18–2).	TYPE II
18	I, II, III, IV	Universal screening for alcohol use must be performed for all injured patients and must be documented (CD 18–3)	TYPE II
18	I, II	At Level I and II trauma centers, all patients who have screened positive must receive an intervention by appropriately trained staff, and this intervention must be documented (CD 18–4).	TYPE II
18	I, II	Level I and II trauma centers must implement at least two programs that address one of the major causes of injury in the community (CD 18–5).	TYPE II
18	I, II	A trauma center's prevention program must include and track partnerships with other community organizations (CD 18–6).	TYPE II
Chapter 19: Trauma Research and Scholarship			
19	I	For a Level I trauma center, at a minimum, a program must have 20 peer-reviewed articles published in journals included in Index Medicus or PubMed in a 3-year period (CD 19–1).	TYPE II
19	I	These publications must result from work related to the trauma center or the trauma system in which the trauma center participates (CD 19-2)	TYPE II
19	I	Of the 20 articles, at least one must be authored or co-authored by members of the general surgery trauma team (CD 19–3).	TYPE II
19	I	Additionally, at least one article each from three of the following disciplines is required: basic sciences, neurosurgery, emergency medicine, orthopaedics, radiology, anesthesia, vascular surgery, plastics/maxillofacial surgery, critical care, cardiothoracic surgery, rehabilitation, and nursing (CD 19–4).	TYPE II
19	I, II, III, IV	CD 19-5 and CD 19-6 – skipped	TYPE II
19	PTC I	The pediatric Level I center's research requirement is equivalent to that of adult Level I trauma centers (CD 10–10).	TYPE II
19	PTC I	In combined Level I adult and [Level I] pediatric centers, half of the research requirement must be pediatric research (CD 10–11).	TYPE II

19	I	In the alternate method, a Level I program must have the following (CD 19–7) a. A program must have 10 peer-reviewed articles published in journals included in Index Medicus or PubMed in a 3-year period. These articles must result from work related to the trauma center or the trauma system in which the trauma center participates. Of the 10 articles, at least one must be authored or co-authored by members of the general surgery trauma team, and at least one article each from three of the following disciplines is required: basic sciences as related to injury, neurosurgery, emergency medicine, orthopaedics, radiology, anesthesia, vascular surgery, plastics/maxillofacial surgery, critical care, cardiothoracic surgery, rehabilitation, and nursing. Trauma-related articles authored by members of other disciplines or work done in collaboration with other trauma centers and participation in multicenter investigations may be included in the remainder. b. Of the following seven trauma-related scholarly activities, four must be demonstrated: • Evidence of leadership in major trauma organizations, which includes membership in trauma committees of any of the regional or national trauma organizations. • Demonstrated peer-reviewed funding for trauma research from a recognized government or private agency or organization. • Evidence of dissemination of knowledge that includes review articles, book chapters, technical documents, Web-based publications, videos, editorial comments, training manuals, and trauma-related educational materials or multicenter protocol development. • Display of scholarly application of knowledge as evidenced by case reports or reports of clinical series in journals included in MEDLINE. • Participation as a visiting professor or invited lecturer at national or regional trauma conferences. • Support of resident participation in mentoring scholarly activity, including laboratory experiences; clinical trials; resident trauma paper competitions at the state, regional, or national level; and other resident trauma presentations. • Mentorship of fellows, as evidenced by the development or maintenance of a recognized trauma, critical care, or acute care surgery fellowship.	TYPE II
19	I	The administration of a Level I trauma center must demonstrate support for the research program by, for example, providing basic laboratory space, sophisticated research equipment, advanced information systems, biostatiscal support, salary support for basic and translational scientists, or seed grants for less experienced faculty (CD 19–8).	TYPE II
Chapter 20: Disaster Planning and Management			
20	I, II, III, IV	Trauma centers must meet the disaster-related requirements of the Joint Commission (CD 20–1).	TYPE II
20	I, II, III	A surgeon from the trauma panel must be a member of the hospital's disaster committee (CD 20–2).	TYPE II
20	I, II, III, IV	Hospital drills that test the individual hospital's disaster plan must be conducted at least twice a year, including actual plan activations that can	TYPE II

		substitute for drills (CD 20–3)	
20	I, II, III, IV	All trauma centers must have a hospital disaster plan described in the hospital's policy and procedure manual or equivalent (CD 20–4).	TYPE II
Chapter 21: Solid Organ Procurement Activities			
21	I, II, III	The trauma center must have an established relationship with a recognized OPO (CD 21–1).	TYPE II
21	I, II, III	A written policy must be in place for triggering notification of the regional OPO (CD 21–2).	TYPE II
21	I, II, III	The trauma center must review its sold organ donation rate annually (CD 16.9).	TYPE II
21	I, II, III, IV	It is essential that each trauma center have written protocols defining the clinical criteria and confirmatory tests for the diagnosis of brain death (CD 21–3).	TYPE II
Chapter 22: Verification, Review, & Consultation Program			
Chapter 23: Criteria quick Reference Guide			
All reference documents will be available at: *https://www.facs.org/quality-programs/trauma/vrc/resources*			